

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT INITIATION

Date: May 31, 1979

Project Title: Enhancing the Specificity of Synthetic Procedures

Project No: G-33-B07 *Green said*

Project Director: Dr. Herbert O. House

Sponsor: DHEW/PHS/NIH - National Institute of General Medical Sciences

Agreement Period: From 6/1/79 Until 5/31/80 (09 year)

Type Agreement: Grant No. 5-R01-GM20197-09

Amount: \$131,799 PHS Funds (G-33-B07)  
17,532 GIT Contribution (G-33-340)  
\$149,331 TOTAL

Reports Required: Annual Progress Reports with Continuation Applications;  
Terminal Progress Report upon grant expiration

Sponsor Contact Person (s):

Technical Matters

Dr. A. E. Hering (Dr. Carl A. Kuether)  
Associate Director for Program Activities  
National Institute of General Medical Sciences  
National Institutes of Health  
Bethesda, MD 20014  
Phone: 301-496-7181

Contractual Matters

(thru OCA)

Evelyn W. Carlin (K. McKnight/S. McKenne)  
Grants Management Officer  
Office of Associate Director for  
Program Activities  
National Institute of General Medical  
Sciences  
National Institutes of Health  
Bethesda, MD 20014  
Phone 301/496-7166

NOTE: FOLLOW-ON PROJECT TO G-33-B06 (08 year)

Defense Priority Rating: none

Assigned to: Chemistry (School/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
School/Laboratory Director  
Dean/Director—EES  
Accounting Office  
Procurement Office  
Security Coordinator (OCA)  
Reports Coordinator (OCA)

Library, Technical Reports Section  
EES Information Office  
EES Reports & Procedures  
Project File (OCA)  
Project Code (GTRI)  
Other

GEORGIA INSTITUTE OF TECHNOLOGY,  
OFFICE OF CONTRACT ADMINISTRATION

Date: August 20, 1981

**Project Title:** Enhancing the Specificity of Synthetic Procedures

Project No: G-33-B07

**Project Director:** Dr. H. O. House

Sponsor: DHEW/PHS/NIH - National Institute of General Medical Sciences

Effective Termination Date: 5/31/80

Clearance of Accounting Charges: \_\_\_\_\_

**Grant/Contract Closeout Actions Remaining:**

- ☐ Final Invoice and Closing Documents  
☐ Final Fiscal Report  
☒ Final Report of Inventions  
☐ Govt. Property Inventory & Related Certificate  
☐ Classified Material Certificate  
☐ Other

NOTE: Follow-on project (10 year) is G-33-B08.

Assigned to: Chemistry (School/Laboratory)

COPIES TO:

Administrative Coordinator  
Research Property Management  
Accounting Office  
Procurement Office  
Research Security Services  
~~Reports Coordinator (OCA)~~

Legal Services (OCA)  
Library, Technical Reports  
EES Research Public Relations (2)  
Project File (OCA)  
Other:

APPLICANT REPEAT GRANT NUMBER SHOWN ON PAGE 1

GRANT NUMBER

## SECTION IV—SUMMARY PROGRESS REPORT

R01-GM-20197-09

PRINCIPAL INVESTIGATOR OR PROGRAM DIRECTOR (Last, First, Initial)

House, Herbert O.

PERIOD COVERED BY THIS REPORT

FROM

THROUGH

NAME OF ORGANIZATION

School of Chemistry, Georgia Inst. of Technology

06-01-79

01-31-80

TITLE (Repeat title shown in Item 1 on first page)

Enhancing the Specificity of Synthetic Procedures

1. List publications: (a) published and not previously reported; (b) in press. Provide five reprints if not previously submitted.
2. List all additions and deletions in professional personnel and any changes in effort.
3. Progress Report. (See Instructions)

1a. Papers published since last progress report (5 reprints of each are enclosed).

1. "Chemistry of Carbanions. 34. Alkylation of a 1-Decalone Enolate with Abnormal Geometry," Herbert O. House, William V. Phillips, and Don VanDerveer, J. Org. Chem., 44, 2400 (1979).
2. "Enones with Strained Double Bonds. 2. The Bicyclo[4.3.1]decane System," Herbert O. House and Thomas V. Lee, J. Org. Chem., 44, 2819 (1979).
3. "Perhydroazulenes. 2. The 2-tert-Butylperhydroazulen-4-one System," Herbert O. House, Cheuk-Chung Yau, and Don VanDerveer, J. Org. Chem., 44, 3031 (1979).
4. "Enones with Strained Double Bonds. 3. Cycloadducts from Bicyclo[3.3.1]non-1-en-3-one," Herbert O. House, Marvin B. DeTar, and Don VanDerveer, J. Org. Chem., 44, 3793 (1979).

1b. Papers in press (1 preprint of each enclosed)

5. "Reactions of the 1,8-Diphenylanthracene System," Herbert O. House, Nabih I. Ghali, John L. Haack, and Don VanDerveer, J. Org. Chem., 45, 0000 (1980).
6. "Enones with Strained Double Bonds. 4. The Bicyclo[5.3.1]Undecane System," Herbert O. House, Ronald F. Sieloff, Thomas V. Lee and Marvin B. DeTar, J. Org. Chem., 45, 0000 (1980).

2. The general goals of this research program and the type of personnel involved remain as described in the original application.

House, Herbert O.

School of Chemistry; Georgia Institute of Technology

Enhancing the Specificity of Synthetic Procedures

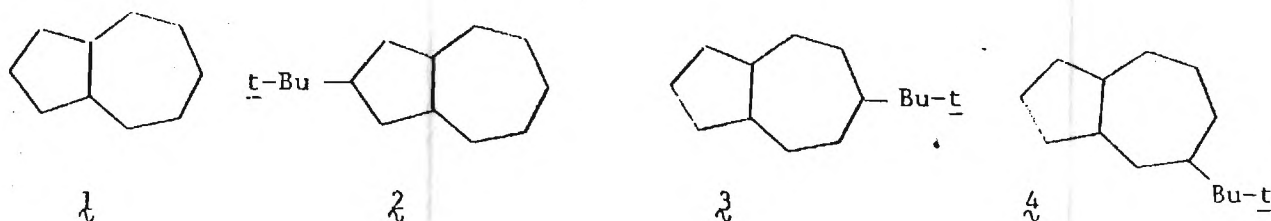
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Summary Progress Report (Continued)

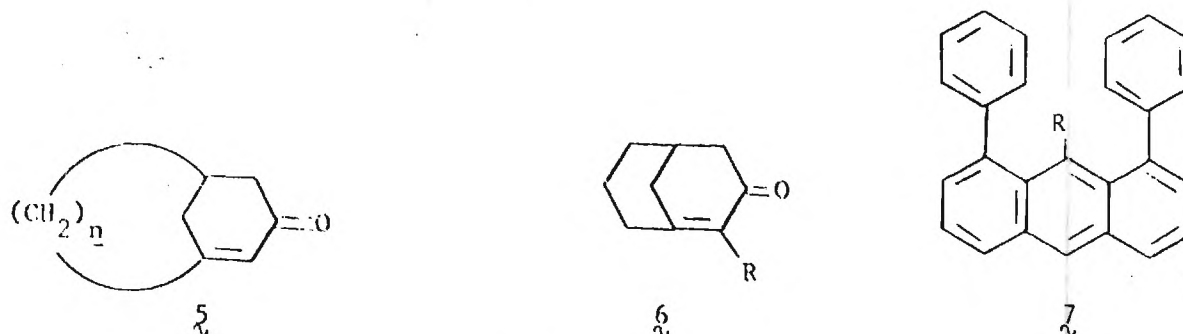
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3. Progress Report

Our use of intramolecular alkylation reactions to prepare a series of perhydroazulene derivatives is continuing along with a companion study of the favored conformation and the stereochemistry of reactions of these materials (see above Refs. 1 and 3 for general approach). The four systems under current study are derivatives of perhydroazulenes 1 - 4.



A family of enones 5 ( $n = 3, 4, 5$ ) with strained C=C bonds has now been prepared and certain of the chemical and physical properties of this system are under active investigation (see above Refs. 2, 4, and 6). Since the most strained member of this family 5 ( $n=3$ ) is too reactive to permit isolation and study, various derivatives 6 ( $R = \text{Me}, \text{t-Bu}$ ) are being prepared to facilitate study. Study of the formation and



House, Herbert O.

School of Chemistry; Georgia Institute of Technology

Enhancing the Specificity of Synthetic Procedures

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Summary Progress Report (Continued)

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chemistry of molecules with functional groups, R, located in the special micro-environment offered in structure 7 is also continuing (see above Ref. 5).

Additional studies in progress include the formation and evaluation of a series of hindered bases (both monofunctional and difunctional) for use as reagents capable of kinetically removing a proton from active methylene compounds in a regiospecific and stereospecific fashion. We are also in the process of studying the introduction and subsequent selective cleavage of certain trialkylsilyl groups of the type  $(CH_2)_n$  Si  $\begin{matrix} \nearrow R \\ \searrow \end{matrix}$ . It is our plan to use these groups as "steric blocking groups" that can be used to control conformation and stereochemistry during a synthetic operation and then be removed.

The undersigned agrees to accept responsibility for the scientific and technical conduct of the project and for provision of required progress reports if a grant is awarded as the result of this application.

2-6-80  
Date

*Herbert O. House*  
Principal Investigator or  
Program Director



G-33-B07

GEORGIA INSTITUTE OF TECHNOLOGY  
ATLANTA, GEORGIA 30332

OFFICE OF  
THE  
COMPTROLLER

September 26, 1980

Grants Management Officer  
Office of Associate Director for  
Program Activities  
National Institute of General  
Medical Sciences  
DHHS/PHS/NIH  
Bethesda, Maryland 20205

Dear Sir or Madam:

Enclosed is the Annual Report of Research Grant Expenditures for  
Grant No. 5 R01 GM20197-09 for the period 6/1/79 - 5/31/80.

If you have any questions or require additional information, please  
let us know.

Sincerely,

*David V. Welch*

David V. Welch, Manager  
Grants and Contracts Accounting

DVW/BITS/jb  
Enclosure

cc: Dr. H. O. House  
Dr. J. A. Bertrand  
Mr. H. Dean  
Mr. O. H. Rodgers ✓  
File G-33-B07

DISTRIBUTED ON 10/2/80

*Rec'd 1 copy*

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

(Instructions are on reverse)

Grant No.

5 R01 GM20197-09

DATE OF THIS REPORTING PERIOD

FROM 6/1/79 TO 5/31/80

PROJECT PERIOD

FROM 6/1/78 TO 5/31/81

☐ CHECK IF FINAL REPORT

NAME AND ADDRESS OF GRANTEE INSTITUTION

Georgia Institute of Technology  
Atlanta, Georgia 30332

TRANSACTION NO.

(08)RIGM20197B

INSTITUTIONAL ID NO.

G-33-B07

## 1. Expenditures of DHHS Funds for this Reporting Period

a. Personnel	\$	h. Alterations and renovations	
b. Consultant services		i. Other	
c. Equipment			
d. Supplies		j. Total direct costs	83,635.53
e. Travel, domestic		k. Indirect costs:	
f. Travel, foreign		Rate 76 % <input checked="" type="checkbox"/> S&W <input type="checkbox"/> TDC	
g. Patient care costs		Base \$47,697.19	36,249.87
		l. TOTAL	\$ 119,885.40
2. Expenditures from Prior Periods (previously reported)			611,630.05
3. Cumulative Expenditures			731,515.45
4. Total Amount Awarded - Cumulatively			748,529.00
5. Unexpended Balance (Item 4 less Item 3)			17,013.55
6. Unliquidated Obligations			-0-
7. Unobligated Balance (Item 5 less Item 6)			17,013.55
8.a. Cost Sharing Information - Grantee Contribution This Period			17,531.94
b. % of Total Project Costs (Item 8a divided by total of Items 1 and 8a)			% 13.0
9.a. Interest/Income (enclose check)			-0-
b. Other Refundable Income (enclose check)			-0-
10. Remarks			

I hereby certify that this report is true and correct to the best of my knowledge, and that all expenditures reported herein have been made in accordance with appropriate grant policies and for the purposes set forth in the application and award documents.

Dr. H.O. House

Professor

David V. Welch

SIGNATURE OF INSTITUTION OFFICER

David V. Welch, Manager, Grants &amp; Contracts Acctg.

Formerly HEW-489 404/894-4624

REPORT OF RESEARCH GRANT  
EXPENDITURES

Date

DATE

Sept 22, 1980  
9/26/80